

### 3. APPROACH SPACING REQUIREMENTS (Application 3.2)

METRICS	Priority		Base Measure Source	Perform. Measure Source	Approach
	Bens.	HF			
1. Pilot response time for verification of lead flight ATC call-out	Medium	Medium		Op/Eval	Human Factors to obtain through flight deck observers RONI
2. Pilot response time for matching the speed profile of leading flight	Medium	Medium		Op/Eval	Human Factors to obtain through flight deck observer/CDTI flight deck data KURT and ERIC
3. Pilot confidence level in relying on equipment for maintaining final approach spacing during low visibility terminal operations	Low	Low		Survey at Op/Eval	As part of pilot questionnaire delivered at Op/Eval KURT
3b) Controller confidence level in Pilot relying on equipment for maintaining final approach spacing during low visibility terminal operations	Low	Low		Survey at Op/Eval	As part of pilot questionnaire delivered at Op/Eval MIKE
4. Flying time during final approach maneuvers compared to equipment off (same conditions and time slot)	High	High	Requires a baseline test	Op/Eval	Measured in OpEval (flight deck / radar) SCOTT
5. Flying time from final approach fix to touchdown compared to equipment off (same conditions and time slot)	High	High	Requires a baseline test	Op/Eval	Measured in OpEval (flight deck / radar) SCOTT
6. Number and duration of ATC communications within terminal area for a specific equipped flight during final approach compared to same conditions with equipment off.	Medium	High	Requires a baseline test with equipment off	Op/Eval ATC voice tapes	Average number and duration compared to that with equipment off RONI
7. Number of mis-identifications by pilot in call-backs compared to equipment off	Low	High	Requires a baseline test	Op/Eval	ATC voice tapes RONI
8. Number of repeated traffic call-outs by ATC due to pilot inability to visually acquire traffic	Medium	High	Requires a baseline test	Op/Eval	ATC voice tapes RONI
9. Separation distance between specific pairs of aircraft during approaches (in periods meeting different meteorological condition criteria) within terminal area airspace compared to average for same path with equipment off	Highest	High	Requires on-off operations.	Op/Eval	Measure under different environmental conditions at the threshold  SCOTT/RAY
10. The number of stolen transmissions	low	High	Historical data	OpEval	From ATC tapes RONI
11. SAFETY BENEFITS – note: these could be obtained indirectly through				Survey at	SURVEY at OpEval and ATC Voice Tapes

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survey – e.g. asking for level of confidence that ADS-B will help these improve.	Low	Low		Op/Eval	KURT/RONI/MIKE
A. Incident rate during final approach maneuvers	Low	Low	Historical	Approximate	
B. Rate of missed approaches	Low	Low	Historical	Approximate	ATC Voice Tapes
C. Rate of operational errors during final approaches	Low	Low	Historical	Approximate	ATC Voice Tapes/radar/ flight deck data
D. Rate of pilot deviations during final approaches	Low	Low	Historical	Approximate	ATC Voice Tapes/radar/ flight deck data

## 4. DEPARTURE SPACING/CLEARANCE REQUIREMENTS (Application 3.4)

METRICS	Priory Bens.	HF	Base Measure Source	Perform. Measure Source	Approach
1. Time between takeoff clearances	High	High	Requires a baseline test	Survey Op/Eval	Human Factors group to obtain through observers ERIC at tower SCOTT on ground RONI -tapes
2. Time taken by pilot to verify lead flight after ATC call-out in marginal VFR or IFR conditions	High	High	Requires a baseline test	Op/Eval	Human Factors group to obtain through flight deck observer/CDTI flight deck data KURT/RONI
3. Number and duration of ATC communications within terminal area for a specific equipped flight during takeoff compared to same conditions with equipment turned off	Medium	High	Requires a baseline test	Op/Eval	ATC voice tapes RONI
4. Taxi-out Time	High	High	Requires baseline data also (historical)	Op/Eval	VERN
5. Time in departure queue	High	High	Requires baseline data also (historical)	Op/Eval	VERN
6. Separation distance between specific pairs of aircraft during departures (in periods meeting low visibility meteorological criteria) within terminal area airspace compared to average for same path with equipment	High	High	Required on-off baseline data	Op/Eval	Measure under different environmental conditions <i>Note: this may belong under enh 6 – not</i>

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off					<i>trying to reduce separation in OpEval – Check with Oscar</i>
7. SAFETY BENEFITS – note: these could be obtained indirectly by asking for feedback on confidence level that ADS-B will help these improve.	Low	Low		Survey at Op/Eval	SURVEY at OpEval and ATC Voice Tapes KURT/RONI/MIKE
A. Incident rate during takeoff and departure	Low	Low	Historical	approximate	ATC voice tapes/Survey
B. Rate of operational errors in terminal area during takeoff and departures	Low	Low	Historical	Approximate	ATC voice tapes/Survey
C. Rate of pilot deviations during takeoff and departures	Low	Low	Historical	approximate	ATC voice tapes/Survey

## 5. RUNWAY/FINAL APPROACH OCCUPANCY AWARENESS REQUIREMENTS (Application 6.1.1)

METRICS	Priory Bens.	HF	Base Measure Source	Perform. Measure Source	Approach
1. Number and duration of ATC communications within terminal area for a specific equipped flight during final approach, landing and taxi compared same conditions with equipment off	Medium	High	Requires baseline with equipment off	Op/Eval	RONI
2. SAFETY BENEFITS – note: these could be obtained indirectly by asking for feedback on confidence level that ADS-B will help these improve.				Survey at Op/Eval	SURVEY at OpEval and ATC Voice Tapes KURT/RONI/ERIC
Degree of pilot awareness of own position during final approach relative to:  A. Runway/taxiway/gate configurations  B. local air traffic at altitudes less than 1000 feet  C. obstacles	High	High		Survey and Op/Eval	Human Factors to obtain as part of main survey  KURT/ERIC
D. Runway incursion incident rate	Medium	Low	Historical	Approximate	
E. Taxi-Clearance deviations	Low	Low	Historical	Approximate	
F. Rate of aborted landings	Low	Medium	Historical	Approximate	

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G. Given a pending runway incursion, what is the likelihood that this equipment would help prevent an incident/accident?	High	High	Historical	Approximate	MIKE/KURT

## 6. SURFACE SITUATIONAL AWARENESS REQUIREMENTS (Application 6.2)

METRICS	Priory Bens.	HF	Base Measure Source	Perform. Measure Source	Approach
1. Number and duration of ATC communications within terminal area for a specific equipped flight during final approach, landing and taxi compared to same conditions with equipment off	Low	High	Same procedure with equipment off	Op/Eval	Compared to baseline – same procedure with equipment off RONI/VERN
2. Taxi out time - Taxi time from push back to departure runway for equipped flights compared to average for all flights over same taxi path (same time slot)	High	High	Same procedure with equipment off	Op/Eval	Compared to baseline – same procedure with equipment off VERN
3. Taxi in time - Taxi time from touchdown to gate for equipped flights compared to average for all flights over same taxi path (same time slot)	High	High	Same procedure with equipment off	Op/Eval	Compared to baseline – same procedure with equipment off VERN
4. SAFETY BENEFITS				Survey at Op/Eval	SURVEY at Op/Eval and ATC Voice Tapes KURT/RONI/MIKE
Degree of pilot awareness of own position during final approach relative to:  A. Runway/taxiway/gate configurations  B. Obstacles	High	High		Survey and Op/Eval	May need to use come type of scale facto  Human Factors to obtain as part of main survey
C. Runway incursion incident rate	Low	Low	Historical	Approximate	
D. Taxi-Clearance deviations	Low	Low	Historical	Approximate	
E. Rate of aborted landings	Low	Medium	Historical	Approximate	

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F. Pilot question – Were you to be in an incident situation, how likely is it that this equip would prevent an incident/accident from occurring	High	High	Historical	Approximate	
G. Controller question – Were you to be in an incident situation, how likely is it that this equip would prevent an incident/accident from occurring	High	High	Historical	Approximate	